Steps for squaring a board

0 – Rough cut to 1" longer and ½" wider

1 – Plane the best face
2 – Joint working edge (best face against fence)
3 – Rip to finished width working edge against table saw fence
4 – Plane to desired thickness
5 – Square one end with miter saw
6 – Mill to length with miter saw

Web frame (drawer ring)

Estimated completion time – five class periods

Equipment/jigs – surface planer, jointer, table saw, miter saw, tape measure, try square, dowel jig, drill, 3/8" bit, bar clamps

Materials - pine (2) 1" x 4 ½" x 30" ®, 3/8" dowels, wood glue

Steps

0. ***Receive a rough cut board of pine.*** The board (at least 4 ½" x 30") will make one web ring. The width of this rough cut has been selected so that we can get (2) 2" wide pieces from each board. We do this so as not to waste material. For example, a 4" wide board would result in one 2" board and a piece that is only 1 7/8" wide (1/8" is lost by the cut of the blade or kerfs).

1. ***Use the planer to mill the best face.*** Set the planer to the decimal equivalent of 15/16". With the best (smoothest/flattest) face of your board face up (where the blades are), feed it through the planer. Use a pencil to draw a large V across the grain of this face. This will assist in matching wood grain in some project applications, so it is a good habit to get into. This also identifies the best face for later steps.

2. ***Use the jointer to mill the working edge straight and square.*** Select the straightest edge of your board - this will become your working edge. If the two edges are curved, choose the edge that curves inward (concave) as your working edge. Place the best face (has a V on it) against the fence of the jointer and the working edge on the in-feed surface of the jointer table. Use the left hand to keep the working edge against the table and the best face against the fence. Once the board passes over the cutters, the left hand remains over the board on the out-feed table side of the cutters while the right hand continues to guide the board across the cutters. Make as many passes as needed for a flat, square working edge.

3. ***Rip to finished width on the table saw.*** Set the table saw fence to 2". Place the best face facing down on the table saw and the working edge against the fence. Rip the board into (2) 2" wide strips.

4. ***Plane to desired thickness.*** Set the thickness planer to 7/8". Place your board with the best face facing down and pass it through the planer. Repeat the process by setting the planer 1/16" thinner each pass until your board is ¾" thick.

5. ***Square one end with the miter saw.*** Use a pencil to mark an X one end of each board. With the miter saw set to 90°, square the X marked end of both boards by trimming a small amount from each.

6. ***Mill to length with the miter saw.*** Set the miter saw stop block at 17 ½", place the X end of one board against the stop block and mill the board to length. Slide the remainder of the board against the stop block and crosscut a second piece to 17 ½". Set the miter saw stop block to 11 ¼" and repeat the process. You now have two styles that are ¾" x 2" x 17 ½" and two rails that are ¾" x 2" x 11 ¼".

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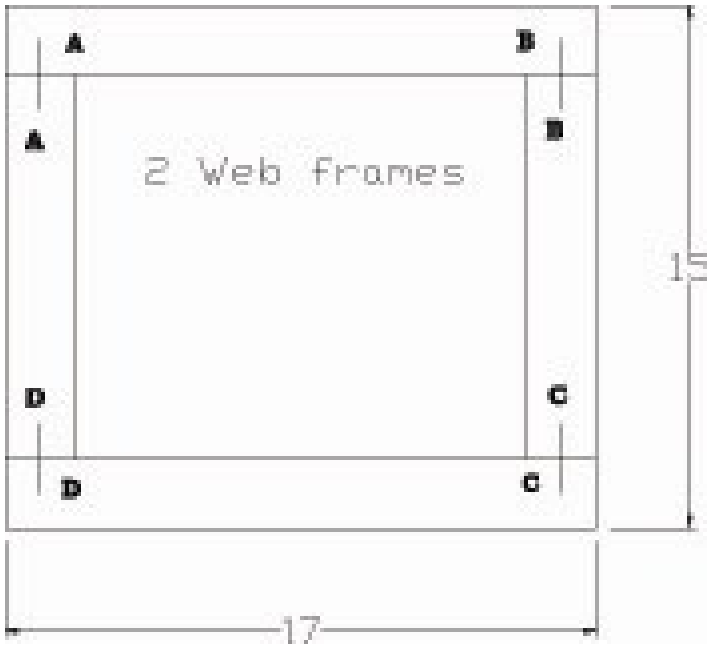
7. ***Use dowel jig and drill (3/8" bit) to drill holes for dowel joints.*** At your work bench, stage your stiles and rails as shown at right. Use a tape measure to find and mark the middle of each rail at its end. Annotate the mark with the letter A. Use a try square to draw a line across this mark that continues onto the adjoining stile. Annotate the stile mark with the letter A also. These marks will be used to bore dowel holes. Continue to mark and annotate each joint where a dowel will be used (B, C, and D).



8. Use the dowel jig and drill to bore a hole on each stile and rail where you marked it in step 7. This hole is for a dowel that will be used to reinforce the joint when we glue the web frame together.

9. ***Glue, assemble and clamp:***
   - Dry fit – trial assembly without glue
   - Set up two clamps on your work bench.
   - Place the stiles across them.
   - Half fill the holes in the front stile with glue. Place a dowel in each. Half fill the hole on one rail, smear a little glue on the rest of the end of the rail and assemble onto one of the dowels sticking out of the stile.
   - Repeat for the other rail.
   - Take the remaining stile, half fill the holes with glue, insert a dowel in each and set aside.
   - Half fill the opposite end of both rails with glue. Spread a little more glue across the end of the rails and assemble onto the open end of the stiles.
   - Place web frame with the clamps centered on the joints and tighten firmly.

10. You should always allow glue to dry for at least 30 minutes, so add 30 minutes to the present time and write that time on your web frame in pencil. This is the earliest time anyone needing clamps should consider removing your drawer ring from the clamps. Use this process every time you glue up.

11. Repeat the process to make a second web frame. It would be more efficient to mill and assemble both web frames at the same time, if you had the shop equipment to yourself. However, making them one at a time allows more of us to work at the same time.